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EXAMINER	
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ART UNIT	PAPER NUMBER
2182	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/682,164	WILSON ET AL.	
	Examiner	Art Unit	
	Tanh Q. Nguyen	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2007 (RCE)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6-10,18 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-10,18 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 24, 2007 has been entered.

Claim Objections

2. Claims 2, 10 is objected to because of the following informalities:

"the specific header portion" in lines 2-3 of claim 2 should be replaced with --the layer specific header portion-- for proper antecedent basis

"the transport layer data" in lines 1-2 of claim 10 should be replaced with --the transport layer header data-- for proper antecedent basis with claim 9.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 1-3, 6-10, 21are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites a network stack interface comprising a header portion, a buffer descriptor, a target software stack layer. In accordance with sections [0043], [0045] and [0049] on pages 12-13 of applicant's disclosure, a network stack 50 includes a plurality of software layers [see FIG. 2], and a network stack interface (or SID) includes a header portion and a buffer descriptor [see FIG. 3]. The network stack interface, therefore, does not comprise a target software stack layer. The network stack, on the other hand, comprises a target software stack layer. It appears applicant meant for the network stack interface to comprise only a header portion and a buffer descriptor. If this is the case, applicant needs to insert "wherein" before "the target software stack layer" to clearly indicate that the target software stack layer is not within the network stack interface (which is not supported by the disclosure).

Claim 1 recites "wherein a selected one of the plurality of buffer descriptors stores a memory address and length of a buffer and references the memory address and length of the buffer to a next selected one of the plurality of buffer descriptors" in the last three lines. Paragraph [0018] is cited by applicant to support the limitation. The examiner cannot find support in the specification for one of the plurality of buffer descriptors to be **selected**, and for a next one of the plurality of buffer descriptors to be

selected. The cited paragraph merely teaches memory address and length of a data buffer being passed from the first SID to the second SID; or merely teaches memory address and length of a header buffer, in addition to memory address and length of data buffer being passed from the second SID to the third SID. There is no indication of any buffer descriptor being selected.

5. Claims 1-3, 6-10, 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites "via the network stack interface that is defined between the transport layer and any higher layer" in lines 8-9. There is no enablement for the same network stack interface to be defined between the transport layer and any higher layer - as one network stack interface is defined in the transport layer [e.g. network stack interface (126, 142. 144, 146) - FIG. 4] and another network stack interface is defined in a higher layer [e.g. network stack interface (124, 136, 138) - FIG. 4]; and as the network stack interface is defined for communication between a transport layer and any higher layer [as in lines 2-3 of the claim].

Claim 1 recites "any higher layer in the software stack layers" in line 3, "any higher layer" in lines 8-9, and "another software stack layer" in line 11. The claim suggests that the higher layer in line 3 is a higher layer different from the higher layer in lines 8-9, and further that either one of the higher layers is different from the "another

software stack layer" in line 11. There is no enablement for higher layer in line 3 to be different from the higher level in lines 8-9, and no enablement for either of the higher layers to be different from the another software stack layer.

Claim 2 recites "the specific header portion defining characteristics utilized by a particular related software stack layer" in lines 2-3. Claim 1 requires the header portion for a network interface between a transport layer and any higher layer (lines 4-9). There is only enablement for the header portion of the network interface to include a layer specific header portion defining characteristics utilized by the transport layer or the higher layer, not for any other particular related software stack layer.

Claim 18 recites "via the network stack interface that is defined between the transport layer and any higher layer" in lines 8-9. There is no enablement for the same network stack interface to be defined between the transport layer and any higher layer - as one network stack interface is defined in the transport layer [e.g. network stack interface (126, 142. 144, 146) - FIG. 4] and another network stack interface is defined in a higher layer [e.g. network stack interface (124, 136, 138) - FIG. 4]; and as the network stack interface is defined for communication between a transport layer and any higher layer [as in lines 2-3 of the claim].

6. Claim 18 recites "wherein the network stack interface is defined for communication between a transport layer and any higher layer" in lines 2-3. Claim 18 further recites "a plurality of buffer descriptors, each buffer descriptor defining common data" in line 6. There is no enablement for each of the plurality buffer descriptors to define common data in the SEP layer - as the first buffer descriptor (138 - FIG. 4)

defines a header buffer (134 - FIG. 4), and only the second buffer descriptor (138 - FIG. 4) defines common data. Furthermore, there is no enablement for a plurality of buffer descriptors in the SCSI layer - as there is only one buffer descriptor (133 - FIG. 4) defining common data.

7. Claim 3, 6-10, 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites "a selected one of the plurality of buffer descriptors further includes buffer length data, the buffer length data defining a size of the data referenced by the memory address pointer" in lines 1-3. Claim 1 recites "the buffer descriptor including a memory address pointer to the data" in lines 6-7. It appears that "a selected one of the plurality of buffer descriptors" should be replaced with --the buffer descriptor-- because such buffer descriptor in lines 6-7 of claim 1 includes the size of the data referenced by the memory address pointer. Furthermore, as noted in claim 1 above, there is no indication of any buffer descriptor being selected.

Claim 7 recites "wherein a buffer descriptor...defines storage layer header data" in lines 1-2. Claim 9 depends on claim 7 and also recites "wherein a buffer descriptor... defines transport layer header data" in lines 1-2. The claims suggest that the buffer descriptor of claim 9 is a descriptor different from the buffer descriptor of claim 7, and also different from the buffer descriptor in the network stack interface defined for communication between the transport layer and a higher level (i.e. the buffer descriptor of claim 1). It appears from the specification that the buffer descriptor in the network

stack interface defined for communication between the transport layer and a higher level (i.e. the buffer descriptor of claim 1) is either the buffer descriptor of claim 7 or the buffer descriptor of claim 9 (see FIG. 4 of the disclosure). Applicant needs to clarify whether the buffer descriptor of claim 1 is a storage layer buffer descriptor (i.e. buffer descriptor of claim 7) or a transport layer buffer descriptor (i.e. buffer descriptor of claim 9). The examiner suggests that applicant uses "a first buffer descriptor", "a second buffer descriptor",...to differentiate the buffer descriptors (i.e. a buffer descriptor in line 6 of claim 1, a selected one of the plurality of buffer descriptors in line 14 of claim 1, a next selected one of the plurality of buffer descriptors in lines 15-16 of claim 1, a selected one of the plurality of buffer descriptors in lines 1-2 of claim 3, a buffer descriptor in lines 1-2 of claim 7, a buffer descriptor in lines 1-2 of claim 9, and a buffer descriptor in lines 1-2 of claim 21).

Claim 21 recites " A network stack layer interface" in line 1. There is insufficient antecedent basis for the limitation in the claim.

8. The rejections that follow are based on the examiner's best interpretation of the claims. Furthermore, the examiner requests that applicant maps out the limitations in the claims with the teachings in the specification to facilitate differentiation between the invention and the prior art, avoid new matter rejections and further the prosecution.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-6, 6-10, 18 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Connery et al. (US 6,246,683).

11. As per claim 1, Connery teaches a network stack interface [FIG. 4; col. 6, line 58-col. 7, line 20] for communication between software stack layers [48, 50, 52, 54, 56 - FIG. 3] during network storage data transfer [col. 1, lines 6-10], wherein the network stack interface is defined for communication between a transport layer [52, FIG. 3] and any higher layer [48, 50 - FIG. 3] in the software stack layers, the network stack interface [col. 6, lines 58-61] comprising:

a header portion [101, FIG. 4; col. 7, lines 2-4] defining characteristics of the network stack interface; and

a buffer descriptor defining data [102, 120, 130 - FIG. 4], the buffer descriptor including a memory address pointer to the data [111, FIG. 4; col. 7, lines 4-6], wherein information and the memory address pointer is passed between software stack layers [col. 7, lines 6-9] via the network stack interface that is defined for communication between the transport layer and any higher layer [i.e. protocol stack defines communication between transport layer 52 and file system layer 50, and data application 48 - FIG. 3; col. 1, lines 37-47];

wherein a target software stack layer [transport layer 52, FIG. 3] creates the

network stack interface and passes the network stack interface to another software stack layer [file system layer 50, FIG. 3], and the buffer descriptor is one of a plurality of buffer descriptors [a buffer descriptor describing the data at the transport layer 52 - FIG. 3 (col. 7, lines 2-10), a buffer descriptor describing the data at the file system layer 50 - FIG. 3 (col. 7, lines 2-10), and a buffer descriptor describing data at the data application layer 48 - FIG. 3 (col. 7. lines 2-10)],

wherein a selected one of the plurality of buffer descriptors [a buffer descriptor describing header buffer 110 at the transport layer 52 - FIG. 4 (col. 7, lines 2-4)] stores a memory address and length of a buffer [header buffer 110, FIG. 4; col. 7, lines 2-4; col. 6, lines 58-61; col. 7, lines 42-46] and references the memory address and length of the buffer to a next selected one of the plurality of buffer descriptors [memory address and length of the header buffer are passed to buffer descriptor describing the header buffer at the file system layer (col. 7, lines 2-10)].

Note that Connery teaches comparison of the address of the data in the buffer descriptor with the address of the buffer into which a layer of the stack intends to copy the data [col. 7, lines 10-18] - hence a buffer descriptor at the transport layer including a memory address pointer to the data, a buffer descriptor at the file system layer including a memory address pointer to the data, and/or a buffer descriptor at the data application layer including a memory address pointer to the data.

12. As per claim 2, Connery teaches the header portion including a common header portion [pointer to header buffer 110, SMB 106 - FIG. 4] and a layer specific header portion, the layer specific header portion defining characteristics utilized by an

associated network stack layer [e.g. TCP 105, FIG. 4 for a transport layer].

13. As per claim 3, Connery teaches the buffer descriptor defining data including buffer length data, the buffer length data defining a size for the data referenced by the memory address pointer [col. 5, lines 5-6].

14. As per claims 7, 9, Connery teaches a layer into which data would be copied [col. 7, lines 10-15], hence a storage layer and a buffer descriptor defining storage layer header data; and a buffer descriptor defining transport layer header data [transport layer 52 - FIG. 3 (see rejection of claim 1 above)].

15. As per claim 18, see the rejections of claims 1, 3 above.

16. As per claim 21, Connery teaches a buffer descriptor of the plurality of buffer descriptors defining command data [col. 4, lines 53-67].

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claims 6, 8, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Connery et al..

20. As per claim 6, Connery does not specifically teach the command data being SCSI command data. Connery teaches possible utilization of analogous commands and other application layer processes [col. 4, lines 60-62]. It would have been obvious to one of ordinary skill in the art at the time the invention was made for command data to include SCSI command data because SCSI command data are analogous command data for SCSI applications, and because SCSI command data involve SCSI-related application layer processes, which are application layer processes for SCSI applications.

21. As per claim 8, Connery does not teach the storage layer being SEP. Since it was known in the art at the time the invention was made to encapsulate frames in a storage layer (e.g. a session layer) to improve bandwidth efficiency, it would have been obvious to one of ordinary skill in the art at the time the invention was made to encapsulate frames at the storage layer (hence using SEP) in order to improve bandwidth efficiency.

22. As per claim 10, Connery does not teach the transport layer being STP. Since it was known in the art at the time the invention was made to use STP instead of TCP in

LAN applications for efficiency, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use STP in LAN applications in order to efficiently transfer data.

Response to Arguments

23. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanh Q. Nguyen whose telephone number is 571-272-4154. The examiner can normally be reached on M-F 9:30AM-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TQN
May 21, 2007

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May 21, 2007